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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,808	09/15/2003	Yutaka Ochi	P69141US0	7384

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EXAMINER

XIAO, KE

ART UNIT PAPER NUMBER

2629

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,808

Applicant(s)

OCHI ET AL.

Examiner

Ke Xiao

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) in view of Kimura (US 5,602,559).

Regarding **Claim 1**, AAPA teaches a method of driving a vertically aligned liquid crystal display (AAPA, Fig. 8) comprising the steps of:

dividing one field of each of pulses carried by a digital drive signal into a plurality of subfields including at least one subfield having one or more display-off periods for which a liquid crystal is not driven and one or more of display-on periods for which the liquid crystal is driven (AAPA, Fig. 9 elements B0-B5), each display-off period being always located between two adjacent display-on periods (AAPA, Fig. 9 all off periods are located between the on periods); and

supplying at least a saturated drive voltage as the digital drive signal to the liquid crystal for each display-on period to modulate light incident in the liquid crystal.

The AAPA fails to teach a ratio of the total of display-on period including the display-on periods of the one subfield over the subfields to the one field being in the

range from 1:6 to 5:6. Kimura teaches that it is known in the art to have a display-on period to one field ratio between 1:6 and 5:6 (Kimura, Fig. 19). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the ratio and sub-field periods as taught by Kimura in the device of the AAPA in order to simplify the preparation of the display (Kimura, Col. 2 lines 2-50).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the AAPA in view of Kimura (US 5,602,559) as applied to Claim 1 above, and further in view of Chen (US 2003/0080931).

Regarding **Claim 3**, the AAPA in view of Kimura fails to teach a step of supplying a voltage larger than the saturated drive voltage to the liquid crystal. Chen teaches increasing the voltage supplied during a transition from a low state to a high state above than the saturated drive voltage, called overdrive (Chen, Pgs. 4-5 paragraph [0048]). It would have been obvious to one of ordinary skill in the art at the time of the invention to supply a voltage higher than the saturated drive voltage to the liquid crystal display as taught by Chen in the device of the AAPA in view of Kimura in order to shorten the response time of the liquid crystal (Chen, Pgs. 4-5 paragraph [0048]).

Response to Arguments

Applicant's arguments filed July 18th, 2006 have been fully considered but they are not persuasive.

Regarding **Claim 1**, the applicant argues that the AAPA in view of Kimura fails to teach the display-on and display-off periods during a subfield as claimed. The examiner respectfully disagrees. The claim language only calls for one display-on period and one display-off period to be in a single subfield using the language "one or more". As such the AAPA (Fig. 9) clearly teaches such a limitation. Kimura is merely brought in to teach the specific ratio of display-on period to the subfield period. Additionally the applicant argues that there does not exist a display-off period between display-on 8 and 4. The examiner acknowledges this fact however, every display-off period which is present is clearly located between two display-on period as taught by both the AAPA (Fig. 9) as well as Kimura (Fig. 19)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ke Xiao whose telephone number is (571) 272-7776. The examiner can be reached on Monday through Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

October 4th, 2006 - kx -


SUMATI LEFKOWITZ
SUPERVISORY PATENT EXAMINER